

# California State Lands Commission

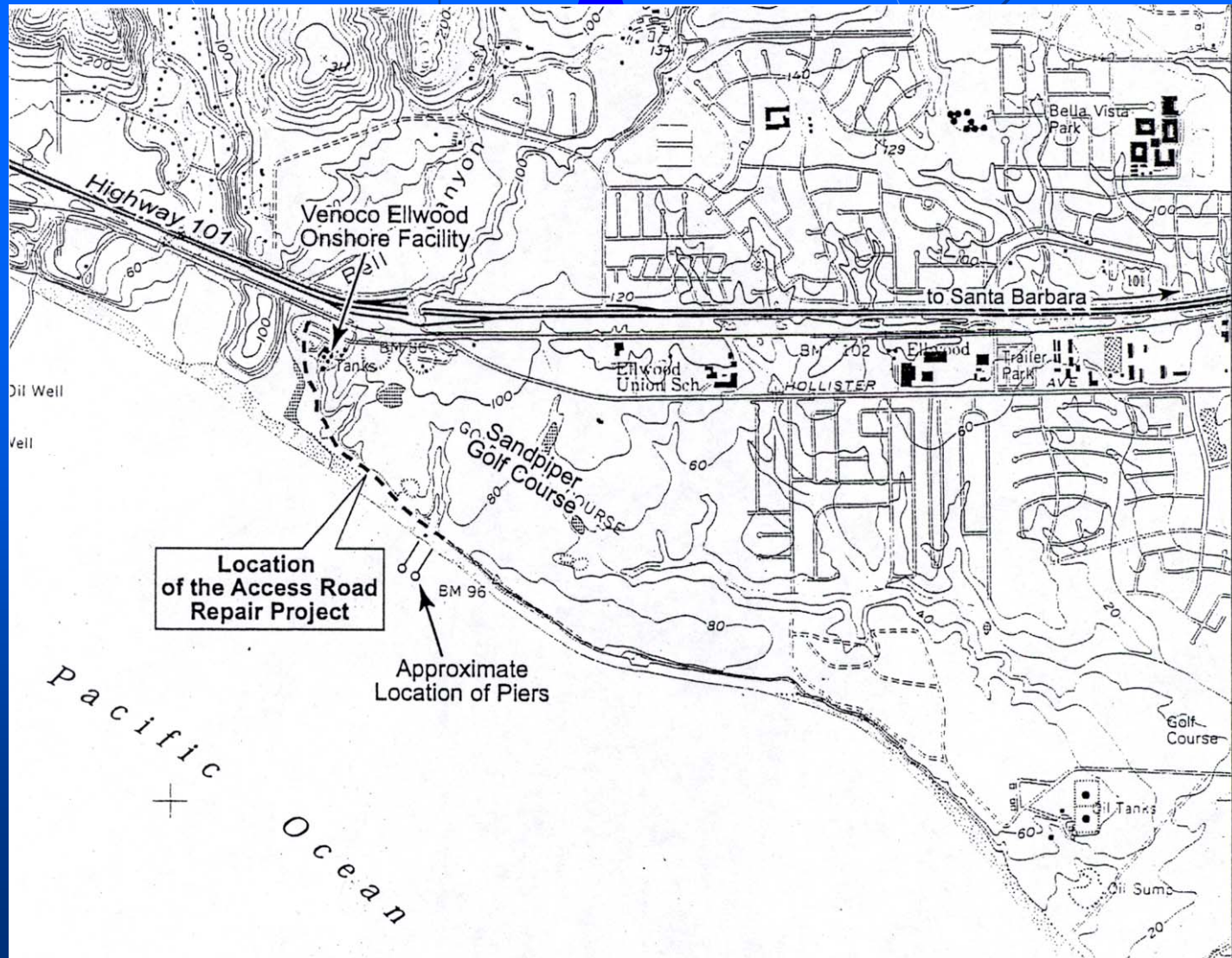
## Prevention First 2002

### Rehabilitation of State Lease 421

September 10, 2002

S. A. Greig

# SL 421 Site Plan



# Aerial of Ellwood Area





# 421 From Offshore



# 421 from the Bluff



# State Lease 421 History

- Initial Discovery 1928
- Developed as part of the Ellwood Field
- Production from the Vaqueros Formation
- Peak production 30,000 BPD
- Abandonment initiated 1960's
- Last two surf Zone wells in California
- Production Shut-in 1994

# Description of the Events

- November 22, 2000      Methane gas leak detected during an APCD inspection of the facilities. A fugitive leak that needed to be repaired was detected.
- November 28, 2000      Oil leak caused by an acoustic level check of the two wells. The testing pressure caused a 2" nipple on the well casing to fail. This resulted in a 15-gallon leak.





12/22/2000 9:30am



# Assessment of the Problem

- Afternoon of November 28, 2000 Management notified of the leak
- Activated Emergency Response Plan
- Made appropriate notifications including “911” and local and state agencies
- Access limited due to condition of the road, piers, and caissons
- How do we ensure the wells are safe?





12/6/2000



# Emergency Permit Issued

- Emergency Permit 00-EMP-006 was issued .
- Allowed for two 2" hard pipes to be placed from the wells to the Ellwood Onshore Facility. One to flow the wells and one to allow for injection of well kill fluid.



12/8/2000 11:20am





12/8/2000 12:10pm





# Emergency Permit Amended

- Emergency Permit 00-EMP-006 was amended on March 21, 2001 to allow for repairs to the road, piers, caissons and finally well stabilization.

## Problems with the Neighbors

- Due to use of the access road, the Sandpiper Golf Course challenged the Emergency Permit.
- Litigation filed to restrict our use of the easement.
- Emergency Permit was amended again to reflect a settlement agreement with Sandpiper Golf Course on April 11, 2001









# ROAD REPAIR



- Restricted to Reinforcement only, no expansion
- No further seaward encroachment allowed
- Remnant pipelines that were encountered were removed
- Three wetlands had appeared in the road area.
- Bluff side of the road had erosion that contained vegetation.





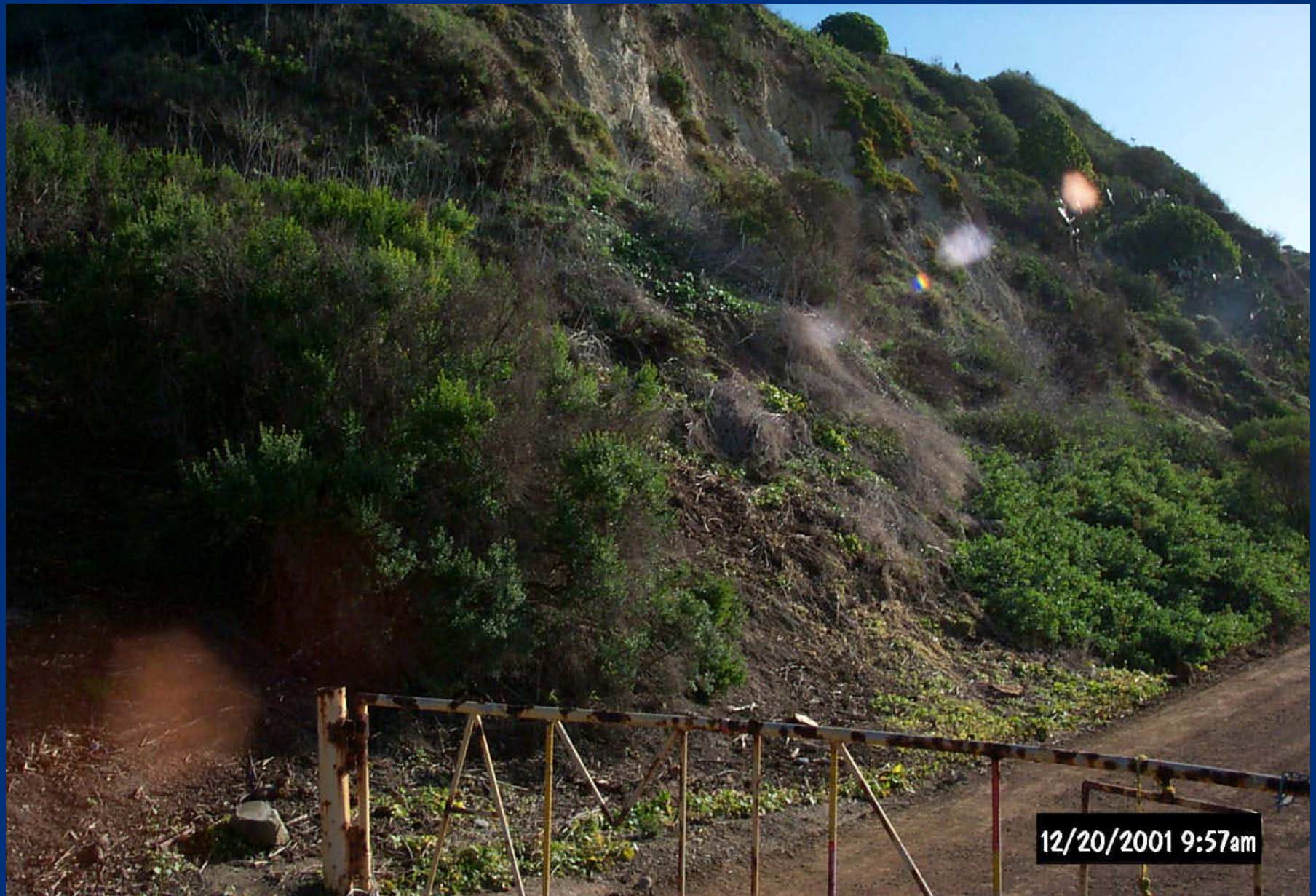






2/23/2001 8:30am









2/23/2001 8:21am





12/20/2001 10:03am





# WETLAND MITIGATION

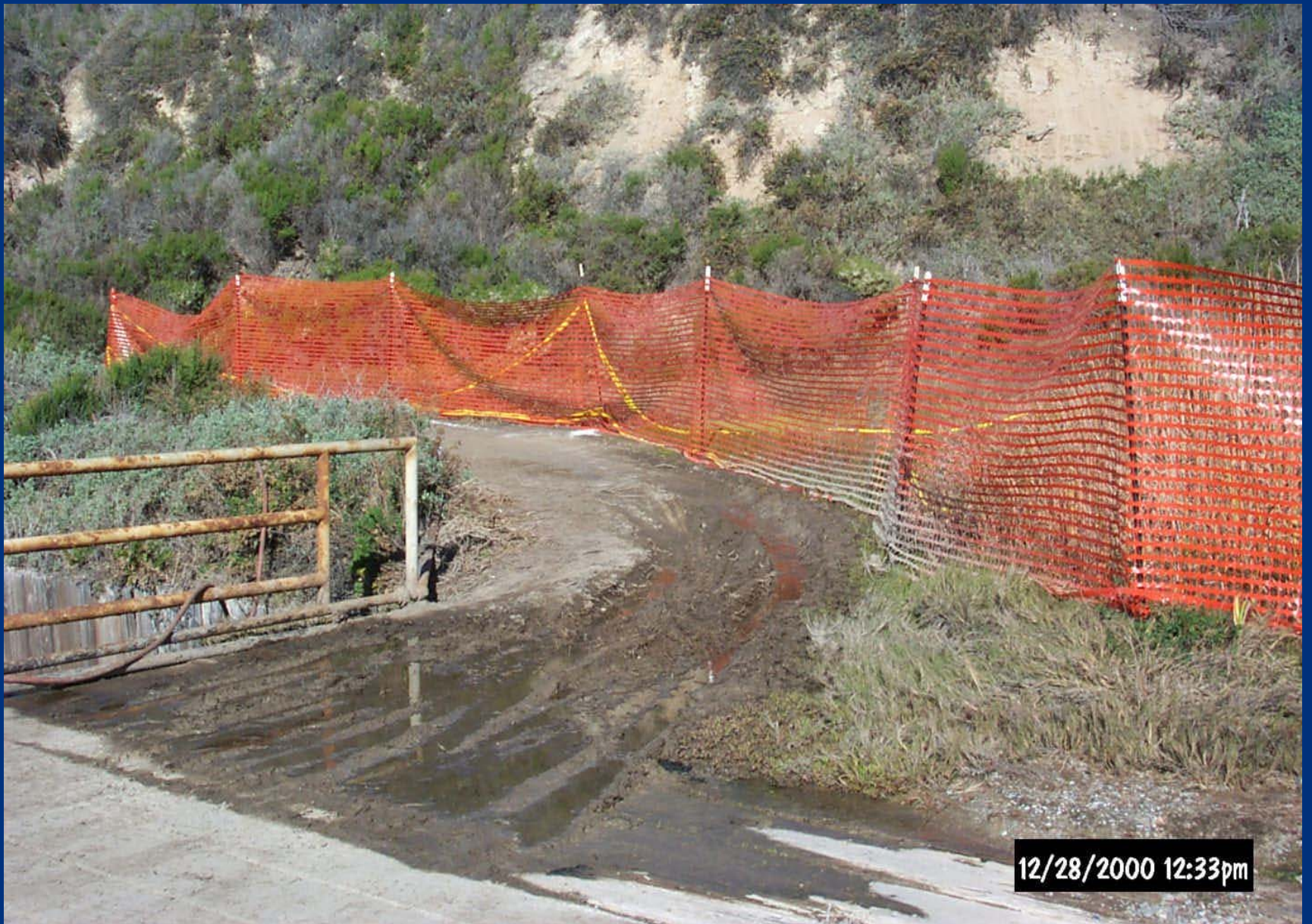


- Wetland delineation report prior to construction.
- First 2 wetlands combined totaled 475 sq. ft.
- Third wetland covered 5,855 sq. ft.
- Prepare a Wetland Impact Minimization Plan to minimize impacts to the greatest extent feasible.
- Prepare an Offsite Wetlands Restoration Plan
- Restore wetlands at a 3:1 and 5:1 ratio.









12/28/2000 12:33pm









12/20/2001 10:09am



# PIER REPAIR

- Tie-in road and pier defined in Work Plan
- Replace 50 piles on the two piers
- Required installation of new steel joists and replacement of damaged wooden joists
- Pile driving to be scheduled during low tides
- NMFS qualified monitor on-site during pile driving
- Pile driving stopped if marine mammals present
- No activity allowed on the beach













# CASSION REPAIR AND WELL STABILAZATION

- All existing equipment was removed
- New set back slabs were installed
- New concrete pillars installed
- Well cellars revamped and reinforced
- Installed new well head on each well
- Cemented new casing in 421-1
- Installed packers at the producing zone of each





# SUMMARY

- 15 gallon leak completely contained
- Road repairs required 645 tons of rip rap, 520 tons of float rock, 662 tons of base gravel delivered by 112 truck trips.
- Forty-five 12" diameter pipe piles were driven on the two piers
- Replaced 4,120 linear feet of 4" x 15" planking.
- Utilized a 80,000 lb. Ideco Doubles Rig on the wells
- Final estimated costs of \$3.8 million

# CONCLUSIONS



- Know your assets
- Maintain all roads
- Ocean air is detrimental to equipment
- Keep vegetation trimmed
- Never let wetlands establish themselves on your property, they are never good for development
- Out of sight should not be out of mind
- The problems very rarely fix themselves